A new species of *Poa* (Poaceae) from the Victorian Basalt Plain

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Introduction

In the course of recent surveys of saline lakes of the Victorian Volcanic Plain (Conn 1993), several populations of an unknown *Poa* of uniform anatomy and similar habitat were discovered. Consultation with a draft treatment of the genus for the forthcoming volume 44 of the *Flora of Australia* (Weiller & Walsh in ed.) and with specimens at the National Herbarium of Victoria (MEL) has led to the conclusion that these populations represent a new, previously uncollected species. The opportunity is taken here to describe this new species in the hope that it may be included in the *Flora of Australia* account.

Taxonomy

Poa physoclina **N.G.Walsh** ***sp. nov.***

A P. labillardierei *Steud. laminis involutis, non-scabrosis, a* P. sieberiana *Spreng. lemmatis glabris dorsaliter praeter costam et araneam, et ab ambabus paniculis diffusis et culmis infirmis cadentibus differt.*

Type: **VICTORIA**. Lake Bolac township, opposite Lake Paracemalac, E side of Lake Bolac – Ararat Rd, 1.3 km N from Glenelg Hwy, *N.G. Walsh 6781* (holotype: MEL; isotype: CANB, K, NSW).

Slender caespitose *perennial*. *Leaves* basal. *Culms* 15–40 cm high, but readily laying flat after anthesis, terete or slightly elliptic in section, antrorsely to retrorsely minutely pubescent, nodes usually absent above basal sheaths. Young shoots intravaginal. *Basal leaf sheaths* not pigmented or, rarely, somewhat reddish, glabrous or with scattered, microscopic hairs. *Sheaths* of culm-leaves often with denser, slightly longer hairs; margins free. *Ligule* membranous, c. 0.3 mm long, truncate, abaxially minutely and sparsely hairy. *Leaf blades* green, not glaucous, conduplicate, biconvex to nearly terete, 10–20(–25) cm, long, 0.2–0.4 mm wide, indistinctly nerved, abaxially glabrous or more commonly with minute (<0.1 mm long), scattered to mid-dense, antrorsely inclined hairs, adaxially minutely densely pilose; tip tapered to a point, but not pungent. *Inflorescence* broad and diffuse, 5–12 cm long, 5–10 cm wide, branches from lowest nodes usually naked and unbranched in the proximal half. *Spikelets* mostly 2-flowered, rarely to 4-flowered

Abstract

A new species of *Poa*, *P. physoclina* N.G. Walsh, apparently confined to halophytic vegetation near the margins of salt lakes on the Victorian Volcanic Plain is described and illustrated. The known range of the species is c. 70 km (between Lake Bolac and Camperdown). Its ecology and conservation status are discussed. Taxonomic relationships with other native *Poa* species are unclear, but floral anatomy suggests that it is most closely related to the widespread and variable *P. labillardierei* Steud. The new species is remarkable for its diffuse, weak-culmed flowering panicle.

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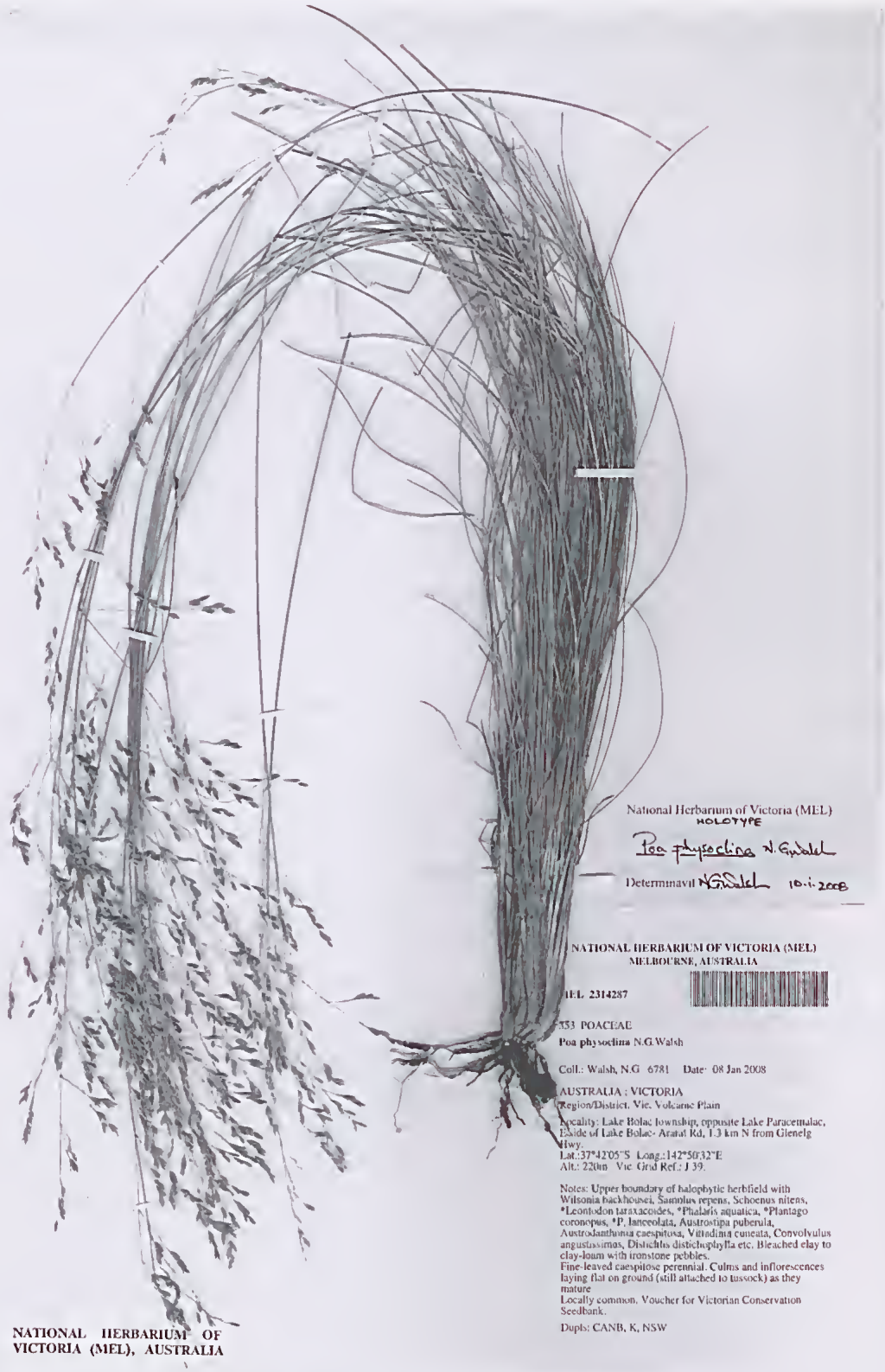

Figure 1. Holotype of *Poa physoclina* (MEL 2314287)

and then the terminal floret often sterile, 3.5–5(–6.5) mm long, green or tinged purple at anthesis, entirely stramineous or paler when seed matures. *Glumes* subequal, 2–3.5 mm long, the upper slightly longer than the lower, ¾ of the length of the proximal lemma, acute, keel scaberulous, intercostal regions scaberulous to scabrous; lower glume 2.2–3.1 mm long, 3-nerved; upper glume 2.5–3.5 mm long, 3-nerved. Lowest *lemma* 3.0–4.1 mm long, broadly acute in profile, 5-nerved, the midrib minutely scaberulous toward apex, covered in the lower ½– by fine white hairs; intercostal regions and flanks glabrous, minutely granular; web present, rather sparse, to 1.5 mm long. *Callus* usually with a few scattered hairs. *Palea* slightly shorter than its lemma, shortly scabrid-ciliate along the keels. *Anthers* 1.5–2 mm long. Fig. 1, 2.

Distribution and habitat: *Poa physoclina* is apparently endemic to the fringes of salt lakes of the Victorian Volcanic Plain (Conn 1993). It is currently known from the margins of 5 lakes or seasonal wetlands in separate drainage systems in an area bounded by Camperdown, Skipton and Lake Bolac township environs. It occurs in a narrow altitudinal band between c. 0.2 and 1.0 m above high water level, but this band may be relatively broad (e.g. to 30 m at Lake Burnie Bolac) and the grass dominant in this area (Fig. 3). Adjacent to the *Poa physoclina* zone toward the lake margin is typically a low halophytic shrubland or herbfied dominated by *Samolus repens* (J.R.Forst. & G.Forst.) Pers., *Sarcocornia quinqueflora* (Bunge ex Ung.-Sternb.) A.J.Scott and *Selliera radicans* Cav., while on the higher, less saline ground is often a grassland dominated by *Austrostipa* spp. and *Austrodanthonia* spp. Species that are commonly associated with *Poa physoclina* include *Distichlis distichophylla* (Labill.) Fassett, *Plantago coronopus* L. (exotic), *Samolus repens*, *Schoenus nitens* (R.Br.) Poir. ex Roem. & Schult. and *Wilsonia backhousei* Hook.f. Soils are saline black cracking clays (black vertosols *sensu* Isbell 1996) or clay-loams, sometimes bleached and sometimes incorporating ironstone pebbles.

Figure 2. Spikelet and floret of *Poa physoclina* from holotype (scale 0.5 mm divisions)

Conservation Status: The grass occurs in conservation reserves at two of the five known sites – the Parupa Lakes Reserve at Lake Bolac, and at Lake Burnie Bolac Wildlife Reserve near Darlington. The remaining sites are on private property. At each of these sites it is locally common and dominant in its restricted ecological range. It is probably premature to provide a credible conservation status, but on current knowledge, it should be regarded as Endangered (EN *sensu* IUCN 2001), or Vulnerable (2Va *sensu* Briggs & Leigh 1996). The major threat is probably encroachment by the widespread exotic grasses *Phalaris aquatica* L. and *Lophypyrum ponticum* (Podp.) A.Love which form extensive swards nearby and show a capacity to tolerate salinity levels near to, if not beyond, those that typify the habitat of *Poa physoclina*.

Etymology: The epithet *physoclina* (Greek *physa* - wind; *klienein* - to lie down) refers to the distinctive trait of the weak culms being blown flat by wind even before the seeds have matured.

Notes: Distinctive features of *Poa physoclina* are the very fine foliage, the weak culms that lack nodes from shortly above the base, the sparse inflorescences, the few-flowered spikelets and the lemmas that are glabrous other than the line of hairs on the midrib, and the presence of a distinct web. Vegetatively it perhaps most resembles fine-leaved forms of *Poa sieberiana*, but the relatively narrower and webbed florets distinguish it from that species. From *P. labillardierei*, which is common on the Victorian Volcanic Plain in less saline habitats, it is distinguished in the narrower, conduplicate, biconvex to terete and non-scabrous leaf blades and the generally smaller, fewer-flowered spikelets. From both of these

Figure 3. *Poo physoclino* in situ, Lake Burnie Bolac. Photo A.M. Pritchard

species it is readily distinguished by the weak culms that are readily laid flat by even gentle winds. (Fig. 3).

It is remarkable that such a distinctive grass had remained unrepresented in the collections at MEL until 2003.

***Specimens examined*: VICTORIA.** 'Koorawerra', Kariah via Camperdown, Dec. 2003, *K. Dickson s.n.* (MEL); Lake Burnie Bolac, 3.xii.2007, *A. Pritchord s.n.* (MEL); Crossroads, on the Eurambeen-Streatham Rd, 6.xii.2007, *A.J. Brown 1801* (HO, MEL, NSW); Skipton, 3.5 km SE of town, 6.xii.2007, *A.J. Brown 1800* (CANB, MEL); Lake Paracemalac, 15.xii.2007, *R. Thompson s.n.* (MEL).

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